

Understanding Interoperability in Humanitarian Aid Organizations

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ABSTRACT

Quality and timely information is critical to effective humanitarian operations during crises. Despite this, there remain limitations to its capture, exchange and understanding both in the inter and intra agency settings. To improve this, methods like interoperability should be improved within humanitarian aid organizations and their wider networks. Learning from the experiences and insights of domestic and international delegates of the Canadian Red Cross, this paper highlights that the biggest added values of interoperability to the intra-agency setting are (i.) increasing organizational capacity, expertise and reputation, (ii.) better tools, processes and leveraging valuable knowledge, and (iii.) improved engagement of volunteers, employees and delegates. The most prevalent barriers are (i.) workplace culture, (ii.) differences in operations, context and communications and (iii.) the socio-technical barriers of systems, processes and integration. The paper concludes by presenting lessons for humanitarian organizations to improve interoperability, supporting resilient responses for future crisis management.

Keywords

Interoperability, the Red Cross, humanitarian aid organizations, crisis management.

INTRODUCTION

It comes as no surprise that disasters are increasing in frequency and severity globally (Coppola, 2006). These encompass all types of hazard, and virtually everyone within their lifetime will be affected by one or more aspects of disaster (Kapucu et al., 2013). In response, humanitarian aid organizations and networks have cultivated extensive experience through operations within emergency management, assistance, social inclusion and community support the world over (IFRC, 2020). Experience also includes both short and long-term initiatives, training programs, medical procedures such as blood donations, resources such as refugee camp equipment, and building experiences working with vulnerable communities (IFRC, 2020). For example, in 2018 more than 22 national Red Cross societies exceeded \$100 million in assistance expenditure, 4 of which recording over \$1 billion (IFRC, 2020). Humanitarian organizations (HO) also rely on collaborations with other actors and authorities, but also on the internal structures and procedures developed within themselves (Zhang et al., 2002).

Interoperability - as one such important element of humanitarian networks - plays a critical role in shaping the effectiveness of resilient response, coordination, decision-making and planning (Vasconcelos et al., 2005). This is generally considered as the exchange of information, expertise and experience between individuals, groups, networks and/or systems (Vasconcelos et al., 2005). Quality information therefore has the potential to improve a range of humanitarian operations throughout all of the disaster management lifecycle phases; the response to the 2010 Haiti earthquake saw the use of new knowledge management systems (KMS) and social media tools to aid with situational awareness and decision-making (Yates & Paquette, 2011); the unfolding management of the Kobe earthquake in Japan utilized emergency information systems (EIS) (Homma, 2015); case management systems were used during the SARS outbreak in Singapore (Tan, 2006).

Interoperability within humanitarian networks still faces challenges. Firstly, information is diverse, widely distributed and nebulous (Zhang et al., 2002). As a resource this is difficult to organize and thus utilize given its variations of data type and even its context (Zhang et al., 2002). Secondly, few organizations are able to appropriately track and document information over time – particularly in situations that are demanding such as during crises, or in networks that have a high staff turnover and short institutional memory (Cotton & Tuttle, 1986; Lu et al., 2013). This means that humanitarian networks must focus on priority tasks first, often resulting in the loss of information, experiences or lessons in the long-term (Lu et al., 2013; Gray et al., 2019). Thirdly, there are

discrepancies in knowledge sharing between international and domestic operations (Dorasmy & Raman, 2011). In the inter and intra- agency setting this is referred to as interoperability and encompasses the insights and exchange of knowledge of all kinds (inter meaning between organizations, and intra within an organization itself) (Dorasmy et al., 2013).

This paper presents a case study of the Canadian Red Cross and uses data collected from 12 semi-structured interviews conducted with domestic employees and international delegates. Results highlight the current barriers and limitations to knowledge sharing in the humanitarian network, with a focus on the interoperability between international and domestic operations teams in the intra-agency setting. Results indicate that the added value of improving interoperability are: increasing organizational capacity, expertise and reputation; better tools, processes and leveraging valuable knowledge; and the improved engagement of volunteers, employees and delegates. The main challenges to this are: workplace culture; differences in operations and context; and the socio-technical barriers of systems and processes. The paper concludes by suggesting several key recommendations for humanitarian organizations to better leverage future knowledge sharing, both within an organization and in the wider humanitarian network. This may improve future humanitarian disaster assistance for all types of hazard.

BACKGROUND

Over the past several decades, the humanitarian scene has been utilizing evermore diverse methods of resilient response to crises (Clark et al., 2015). The development of new technologies and tools such as social media have revolutionized data availability, capture and exchange (Shamoug & Juric, 2011). Consequently, data-driven approaches in humanitarian operations rely on organizing, consolidating and evaluating data collected. Existing practices for this can therefore be laborious and will often need to account for variations in data-type, integration and interoperability issues between systems and data, and accounting for differences in human interpretation (Clark et al., 2015). All of which depend upon the structure and procedures in place within an organization (Vasconcelos et al., 2005). Furthermore, given the highly volatile and often unpredictable nature of disasters, the data needed to support decision-making and other types of humanitarian operations can sometimes be incomplete, or unavailable in a timely manner (Tatham et al., 2016).

To support and improve future humanitarian responses and capacity, research such as Van de Walle et al., (2014) has suggested that there are a plethora of components which must be analyzed. It is these collective aspects that cumulatively effect the wider humanitarian network, and thus future operations. Decision-making, coordination and system effectiveness have been shown to impact the wider network (Van de Walle et al., 2014). The ability of organizations to exchange operational information and to use it to inform their decision-making – referred to as interoperability – is therefore a vital component of responding to humanitarian events effectively (Janssen et al., 2014). Kapucu (2005) adds that rigid hierarchy and centralized structure similarly inhibit the necessary flexibility needed for inter-agency collaboration. Network integration and “cliques” of responders who tend to collaborate with one another represent another issue (Ngamassi et al., 2014). Functioning organizational structure and hierarchies, too, have been highlighted through the case study of the 2010 earthquake in Haiti as being integral for crisis response (Altay & Labonte, 2014). Subsequently, it is crucial that HOs have a decision-making process which encapsulates individual organizational strengths (and weaknesses) within a multi-agency framework (Kapucu, 2005).

Salient technical and cultural issues also affect interoperability and the opportunities afforded by technological advances within the humanitarian network (Tatham & Spens, 2016). Technologically, the differences in systems, tools, programs and software may each impact interoperability (Tatham & Spens, 2016). While this is somewhat lessened within the same organization (i.e. two different HOs may use different management systems), the specific functions of certain teams within a humanitarian organization still face barriers (House et al., 2014). Culturally, one’s work-place environment, and the level of trust placed between internal teams and in the command structure remain important (Allen et al., 2014). One’s ethical motivation to support the organization and wider humanitarian cause again may have an impact on how best to utilize information. The most effective humanitarian responses account for these aspects, and tailor their decision-making processes suitably towards technological and cultural awareness (Rubinstein, 2014; House et al., 2014).

RATIONALE

The aspects discussed in the background remain interesting and complex as a majority of literature that analyze humanitarian networks tend to use quantitative analysis, network analysis, social media and other data (Tan, 2006). While extremely valuable, these kinds of methods haven’t sourced data from within prominent large humanitarian organizations. Fewer still have demonstrated this through the qualitative opinions and experiences of humanitarians themselves working within crisis response to better explain the components of intra-agency

functionality (Tan, 2006). Partly, this is due to strict data controls within organizations who must preserve a professional appearance for legal reasons (Tran, 2018). Secondly, this is due to the fact that humanitarian networks are often in the midst of time-critical operations and lack the time and resources needed to capture lessons learnt (Piot et al., 2019). Finally, gathering data originating from multiple different types of individual is time-consuming and challenging to compare (Tan, 2006).

The Canadian Red Cross (CRC) is a large humanitarian aid organization who works in collaboration with a range of national and international partners. As part of their ongoing operations, regular internal reviews are conducted as well as feedback collected and assessed to ensure that the society is continually improving its responses. This has become increasingly important in the wake of the COVID-19 pandemic which has impacted and changed the way in which humanitarian organizations make decisions and respond to events. For example, 2020 marks the first year where multiple components of the CRC's Emergency Response Unit (ERU) were deployed domestically rather than internationally alone. Further to this, delegates usually deployed in response to health crises internationally were deployed domestically in Trenton, Cornwall, Vancouver, Lasalle and other areas to contain and mitigate COVID-19. This has provided a unique opportunity to collect data and form lessons due to the unprecedented situation. This, therefore, may have implications for the wider exchange of information during a pandemic within the humanitarian network. The overarching research question is:

“What are the lessons the wider humanitarian network can learn from the CRC's experience responding to crises, particularly in the area of interoperability?”

METHOD

Semi-Structured Interviews

To ascertain their perspectives on intra-agency interoperability, a series of 12 semi-structured interviews were conducted with employees and delegates of the CRC society. Using the CRC as a lens to better understand other humanitarian organizations, the interview participants were purposively sampled based on their prior experiences. Inclusion criteria was that the informant had worked for at least one domestic and at least one international deployment for the CRC as an employee, volunteer and/or delegate. Suitable candidates were found using internal knowledge of the CRC staff and a snowball sampling method wherein the researchers contacted individuals who were known to match the inclusion criteria. Suitable candidates were then able to provide information of other individuals who also matched the inclusion criteria. Question examples include *“please can you comment on the strengths and weaknesses of your previous CRC operations”*, and *“what were the main lessons you learnt, and how might these be used in future responses?”*. Interviews were conducted until a data saturation point was evident (i.e. the point at which no new themes are observed in the data) (Guest et al., 2006).

Interviews followed a semi-structured question format which focused on the benefits and limitations that the interviewees had experienced throughout their deployments. Interviews lasted for one hour, and were recorded using audio and later transcribed manually by the researchers. All interviewee data has been kept anonymous to protect the identities of individuals working within the society. It is important to note however that all opinions expressed within interviews are that of the individual alone and do not represent the stance that the Canadian Red Cross society has as an organization. Data was processed manually by the researcher using methods of emergent thematic analysis (i.e., encoding qualitative data to reveal the main themes, which refer to the following results headings respectively) (Cassell et al., 2005). Data validity was ensured by conducting the interviews with a moderator present, whose role was to ensure data collection standards and to avoid bias, and structuring questions to avoid leading the interviewee (i.e. avoiding leading language that assumes an answer before given). The moderator remained the same throughout each interview. The themes indicate that the added value of improving interoperability are: increasing organizational capacity, expertise and reputation; better tools, processes and leveraging valuable knowledge; and the improved engagement of volunteers, employees and delegates. The main challenges to this are: workplace culture; differences in operations and context; and the socio-technical barriers of systems and processes.

RESULTS

Organizational Capacity, Expertise and Reputation

One of the most significant contributions that interoperability was found to have in the intra-agency setting was that of increasing the organizational capacity, expertise and reputation. Interviewees evidenced that there is a wealth of internal knowledge held by both domestic and international CRC employees, particularly in health, shelter, water and sanitation developed through the repeated exposure of international teams during deployments. Domestically, there is expertise in social emergencies, case management and cash transfer programming. Various other skills have also been developed during different types of operations which result in the increased knowledge

and capacity of delegates, staff and volunteers alike. An interviewee posited that “*I think that the CRC are good at bringing back knowledge and experiences from deployments both internationally and domestically and using those lessons from abroad to develop skills and competencies. I think that’s huge and brings so much added value*”. This was correlated in other literature such as Sharma et al. (2020) in their own study of the CRC, who similarly state that “*participants learned skills in international deployment with CRC that can be applied to domestic deployment in Canada, including adaptability while working in unstructured settings and cultural awareness of Canadian subcultures*”, and in other examples such as Rubinstein et al., (2008).

Interviewees further explained that the reason CRC employees had skillsets suited to various types of deployment was because they required similar core competencies (which are defined as “skillsets” unique to an individual which are built up through experience and training over time). One stated that “*the attributes needed for international deployment are also essential to domestic response as well. These vary obviously, especially with the deployment context, but adaptability is needed for both. Harmonizing competencies across Canada is something we should strive for more, while being as flexible as possible, and maintaining our reputation to support the organizations capacity to help*”. Being able to share information, knowledge and expertise has allowed the CRC to develop more multi-layered and developed teams, argued in relevant literature to be one of most important aspects of impactful humanitarian assistance. This supports the findings of other studies such as Sharma et al., (2020) which states that “*Red Cross participants learned to create high-functioning teams, maintain training and engagement, and coordinate between different levels of management and government*”. This remains paramount to CRC operations given Canada’s unique multilayered provincial, territorial and national governmental composition.

Organizational Staff Engagement

A significant number of interviewees stated that they believed that improved interoperability between teams will not only be beneficial to the organization but would actively increase their own engagement and commitment to overall humanitarian objectives. To better utilize the knowledge held by certain types of team members it is important to document what this is, and how it may contribute or impact future operations that aim to become more interoperable (summarized in table 1 below).

Table 1. A summary of types of organizational member, their unique strengths, and how these can be better utilized in intra-agency interoperability.

Type of Team Member	Typical Geographic Deployment	Member Strengths	Possible Contribution to Interoperable Model	Added Value to Interoperable Model
Volunteer	Domestic	<ul style="list-style-type: none"> - Better understanding of the context - Limited time involvement - Direct relation with beneficiaries - Embedded in their communities - Limited level of predictability of availability. - Voluntary work 	<ul style="list-style-type: none"> - International Deployment if interest and capacity - Training and lessons learned of international - Delegate - Participation to international forum 	<ul style="list-style-type: none"> - Better engagement - Increase capacity and experience
Staff	Both	<ul style="list-style-type: none"> - Maintain, develop, and improve systems and processes of the organization - Institutional memory of the organization, - Define and implement the vision of the organization - Technical expertise - Full time commitment - Stable income, on contract 	<ul style="list-style-type: none"> - Adapt systems and tools to facilitate interoperability - Increase the scope of the advisory role to all operations instead of limiting their role to one team - Design protocols to ensure cross-training and cross-deployment of experts 	<ul style="list-style-type: none"> - Increase capacity of the organization - Better predictability and readiness - Better overall knowledge and increase expertise
Delegate	International	<ul style="list-style-type: none"> - Limited time involvement - Strong capacity to adapt - Limited level of predictability of availability - Contractual 	<ul style="list-style-type: none"> - Involvement in their community if interested and having the capacity - Training and lessons learned shared with domestic operations 	<ul style="list-style-type: none"> - Better engagement - Increase capacity and experience

Results indicate that each type of individual has a range of potential benefits to interoperability, as well as to the organization itself and ultimately the wider network and communities that benefit from well-designed responses. This is further supported in informant statements that identify the social structures of Red Cross societies as being

fundamental, where a culture of volunteering throughout one's youth is common and culminates in a life-long commitment (in one way or another) to the society. Using knowledge from a deployment in Nicaragua, one interviewee described that *"a majority of the volunteers were around 17 and they were doing most of the work, at that young age! 10 years later these kids are now branch directors, leading volunteer groups themselves. Lebanese was another example where the youth stay with it for years and years. You bring people in early and they make friends for life, and it becomes part of their lifestyle and career – you become Red Cross at heart"*. This corroborates with the principle documented in literature that the more engaged, motivated and fulfilled humanitarian staff and volunteers feel, the more effective and dedicated to their roles they will be over time (Dickman et al., 2010; Dittus et al., 2016).

Workplace Culture

A workplace culture is considered the shared values, belief systems, attitudes and set of assumptions that people in a workplace share (Walton et al., 2016). Several informants mentioned that the domestic and international teams featured their own workplace cultures, rather than sharing the same. Some even expressed that they would consider the teams originating from two different organizations. The interviewees agreed however that those differences are not the consequences of the nature of the operations, but mostly because the two teams had evolved in parallel instead of in complementarity trajectories. Therefore, the commitment to the principles and the core mission of the Red Cross are similar - but the processes and tools developed are different. This circumnavigates a "one size fits all approach" which may be detrimental to both sides. An informant explained that *"it's important to make a conscious effort to update our system, to talk about the new philosophy/approach to emergency response and our organizational culture. It's about the people going through a crisis rather than the geographical needs uniquely"*. Bridging the gap between these two cultural spheres is consequently one of many aspects that has been included in the CRC's 2030 vision.

Results indicated that workplace culture may also be affected by an employee's state of mind, regardless of whether this is directed towards the organization explicitly. An informant used both their international and domestic experiences to illustrate that *"there is a difference in operating abroad when you know your family is safe at home. It was different to operate in a context when your own community is affected which was the case during the wildfires in British Columbia, Fort McMurray operations and the COVID19 outbreak. It is important to integrate those considerations into the operational model"*. This reflects the findings of studies in humanitarian operational settings which reveal that mentally and physically demanding jobs – for example being deployed to crises – experience a higher turnover of staff and volunteers (Dubey et al., 2016). This represents an interesting topic as there are few published findings that identify or explore the types of personal reasons that may impact humanitarian operations in the modern day (going beyond Cotton & Tuttle's (1986) original meta-analysis of 24 variables affecting humanitarian turnover).

Finally, interview results identified two specific aspects of the CRC workplace culture which need to be taken into consideration for future operations. Firstly, the special nature of the voluntary workforce should not be overlooked. This remains a core principle of the Red Cross and Red Crescent movement and is an essential pillar of the CRC, demonstrating value since the society's origin (Glassford, 2008; Forsythe, 2005). Annually, more than 130,000 Canadians are helped every year by a team composed of 70% of volunteers which is a figure expected to rise following the COVID-19 pandemic. Secondly, the impact of local emergencies (such as COVID-19) on a local workforce must be pre-empted and mitigated. Not only is this beginning to emerge in concerns of employees and volunteers, it is also gradually emerging in the humanitarian literature given the delayed nature of academic publishing. Following international guidelines on the emergency, mitigation, preparedness and readiness steps have been designed and incorporated into the CRC response to reduce the mental risks posed to staff and volunteers.

Bridging Differences in Operations, Context and Communities

Interviewees evidenced that the main operational differences between domestic and international teams is that of the structure and context of the operations that they conduct. Most countries where international relations are conducted have a mid to low GDP, and in most cases feature lower legal restrictions and local governmental involvement compared to the domestic Canadian setting. The type of response is also mostly focused on health, water & sanitation, national society development and shelter. Operations in Canada focus on emergency preparedness, case management after emergencies (wildfires, floods, etc.), social emergencies, restoring family links (RFL) and more recently public health interventions. These naturally require bridging, especially in cases where teams are formed of individuals originating from different types of operations and holding different competencies (Labbé & Daudin., 2015). In these kinds of deployments an informant explains it was necessary to

“sit down with the other team we were working with and seek to understand what their response was, so as soon as we understood that we knew the structure - that was the only main difference and it required communication and context to solve”.

All informants mentioned that despite the different type of context and structure, they all had the competencies and skills to adapt to different systems. One interviewee stated that, *“there are differences between international and domestic operations in the structure, the tools that are utilized, the operation cycle, and even in the common language that we’re using to communicate. It feels as though these models aren’t well understood from each team’s perspective, which makes understanding the overall objectives confusing for everyone involved”.* Better briefing on the communication lines, roles and responsibilities and language (mostly the acronyms used by both teams) would have facilitated the transition. This supports literature such as Villa et al., (2017) and Gunasekaran et al. (2018) that argue communications theory must play an increasing role in humanitarian operations to achieve continued results. While team members with experience in both domestic and international operations were able to facilitate the adaptation by essentially acting as “translators” for different operations, tools, processes and contextual understanding in these cases, more attention must be paid to team composition and interactions in future operations.

Another communication issue found to require bridging between teams was that of mutual respect and understanding. An interviewee explained that one of the biggest challenges they had faced within the organization was *“having a younger, less experienced employee come into the deployment I was working on and tell the other more experienced people how to respond – this didn’t come off well and created a bit of tension. This was resolved through communications quickly, but respecting one another and basic communications between individuals is always a good lesson to take into future deployments”.* They went on to clarify that this likely was a result of individuals subscribing to a particular management structure and lines of communication that were not necessarily held by different employees in different teams. Interoperability may too be confounded by time restraints as priority must be placed on urgent operational tasks, with individuals becoming more familiar with one another a lesser priority. Particularly given the current pandemic, *“COVID-19 has made the clear lines of structure more blurred. So every deployment had to be thought about more in terms of structure and response, we just sort of rolled with it. For us it didn’t work the same way each time, which I think is down to the unique nature of COVID-19 as well as the scale of the country.”*

Systems, Training and Information Management

The main challenge to effective interoperability between intra-agency humanitarian teams is that of the systems and processes that are employed. Informants mentioned that the hardest challenges they had in navigating the two teams were that components, such as those from information management and in support services, are different and often not directly linked to one another. The information management systems, software and tools used also differ and may include one or more of: Smartsheet, Office 365, Sharepoint, one drive, Teams, Skype for business, LinkedIn learning, Slido, etc. An interviewee explained that to help with COVID-19 emergency deployments, *“we created a flowchart for each of the CRC branch leaders/managers to channel requests to help with things, but we still struggled with the difference between independence and control in provinces having different approaches to things”.* The informants mentioned that while a better harmonization is preferred, it will still be possible to operate effectively if the team members are appropriately trained on the specific systems, software and tools used by the other side before deployment.

A majority of interviewees also stated that they thought a briefing information package on politics, command chain structures and processes would also likely be a beneficial practice. An employee explains that *“we focus heavily on training and I think that detracts from information for people being deployed. International operations do a better job at this due to the sensitive nature of responses that may need to account for different languages or situations, whereas domestic tends to focus on series of trainings”.* The informant further highlights the importance of information management with their first domestic experience; *“we had a strong team made up of people with different types of expert knowledge, however there was an assumption that I would know how domestic operations worked in more detail than I did. Fortunately, because of the strengths and experiences of the other team members we were able to discuss, and then to merge tools, systems and a mutual understanding. That really made a difference and without it the deployment would have been different”.*

DISCUSSION AND RECOMMENDATIONS

1. Developing Broader Trainings and Briefings

To ensure that staff, volunteers and delegates are as prepared as possible for operations, teams should prepare

clear and concise information packages designed for certain types of team members. This should include a one-page document or series of interactive videos (to avoid information overload in a new situation) on the different tools, processes, structures and contextual information of the operation. Information packages should also differ depending on the area of the operations, whereby each domestic Canadian geography has its own resource. This should be extended to volunteers and staff who are already working within operations or are already deployed to increase latent knowledge and improve future operations.

2. Establishing Clearer Communication and Responsibilities

The conclusion of the ERU deployments in Canada showed that despite the success of those interventions, the roles and responsibility of the ERU team and the different provinces were sometimes not clear. To develop SOPs for the different emergency tools such as the ERU, RRM would facilitate the process. There should also be efforts made to clarify the different methods of working at the strategic level. Middle management and project managers should work with delegates, staff and volunteers to organize workshops and meetings specifically designed to communicate between individuals and teams, with the ultimate goal to better understand the culture and context of other teams and how they integrate with one another in operations settings. These should be held regularly to ensure that information and knowledge that is time-sensitive and relevant can be utilized to the best of its ability, especially given the dynamic nature of operations for humanitarian organizations.

3. Harmonizing Tools and Processes

A systematic assessment of the different tools and methods of working should be conducted to identify good practices and areas of improvement. This should be recorded within the organization and made available to all teams and employees easily. It should also feature a selection of the best practices and standards for each tool and method, with the ability of individuals to contribute to this wealth of knowledge as and when they used or developed something new that could benefit the entire organization. Following domestic and international operations, it would also be valuable for individuals to be able to report back on their personal experiences and findings to the hierarchy with the ability to put oneself forward to facilitate a training program or briefing on the most valuable knowledge brought back.

4. Integrating Organizational Structures

A systematic analysis should be conducted to better integrate support services, particularly that of human resources (HR). This should be designed to avoid the duplication of roles performed by team members during operations. Additionally, a mechanism for capturing and understanding team members experiences, competencies and trainings completed between operational teams must be developed and implemented. This would allow for an easier exchange of knowledge within the organization and would increase interoperability between teams. It would also allow for individuals to assess which areas of their skills and knowledge they would like to improve should they desire to build a career, move teams, or wish to be deployed in certain areas or for certain hazards. Alongside this, it may be beneficial to consider assigning a mix of staff, volunteers and delegates to both domestic and international teams. This would utilize their unique strengths and added values to interoperability better and would allow for a wider range of knowledge and expertise to be shared in any given operation. This may result in the increased empowerment and thus engagement of staff who believe that their knowledge and experience is directly benefiting the organization, and the overarching humanitarian objectives that continue to unify employees.

CONCLUSIONS

Using the Canadian Red Cross society as a lens to better understand the humanitarian setting a number of valuable findings have been revealed. The consensus of 12 employees explain that improved interoperability is likely to result in more effective responses, increased organizational capacity, expertise and reputation. This is particularly the case for challenging operations that required interviewees to learn new skills, processes, tools and contextual understanding; which they were then able to share with the wider network. By identifying, utilizing and sharing these kinds of values between individuals, staff also felt heard, seen and more engaged in their roles. Methods of improving workplace culture and the differences between teams is clearly still required for any humanitarian organization. The importance of employee mental health, too, should be an area that future studies seek to explore especially given the context of the unfolding COVID-19 pandemic. Unsurprisingly, communication is integral, but requires continued evaluation and improvements to ensure that organizations may function to the best of their capacity. Finally, the plethora of systems, software, tools, processes and structures warrant better integration and documentation if they are to ultimately provide not only the business efficiencies for which they are designed, but also if they are to act as enablers rather than barriers to organizational cohesiveness.

In summary, there are four key recommendations that have been formulated to improve humanitarian responses.

These are (1.) developing broader trainings and briefings, (2.) establishing better communication channels and responsibilities, (3.) harmonizing tools, software and processes, and (4.) integrating structures. These would allow for humanitarian organizations to plan, respond, coordinate and mitigate to best of their ability in critical and often challenging situations. These recommendations may be valuable for other organizations seeking to better support the intra and inter-agency settings, and subsequent wider communities that rely on their effectiveness in the face of disasters. Recognizing that the impact and overall devastation of the pandemic has intimately affected every person, organization, and government globally, of the rules of leveraging knowledge in the pursuit of building resilient organizations have fundamentally changed. Utilizing the lessons learnt will help ensure readiness for inevitable future hazards that are becoming more inextricably connected to both the event and an entities' ability to respond. In light of the pandemic, recalibrating new lenses to help better identify, capture, analyze, and operationalize these lessons will reduce risk and increase resilience.

Future Research

It is important to note that due to the broad range of themes presented in this paper it is unfeasible to discuss literature in each of these areas to a high degree. Instead, this work should be viewed as a foundational case study upon which future work will individually appraise the emerging themes. This may address the gaps in research identified, and relate the study findings to wider implications to the inter-agency setting (building upon intra-agency findings).

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